“Predicted performance of Magnetized Semiconductor Phase Shifters for Millimeter-wave Microstrip Array Antennas

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Abstract

The tunable phase shift of a planar magnetized semiconductor phase shifter is presented, suitable for integrated environment due to its miniature size, low biasing requirements and lower material related problems at millimeter-wave frequencies. A linear microstrip phased array antenna with integrated semiconductor phase shifter is designed and the calculated beam steering properties are tabulated. The design process is verified by simulating similar ferrite based linear phased array antenna.